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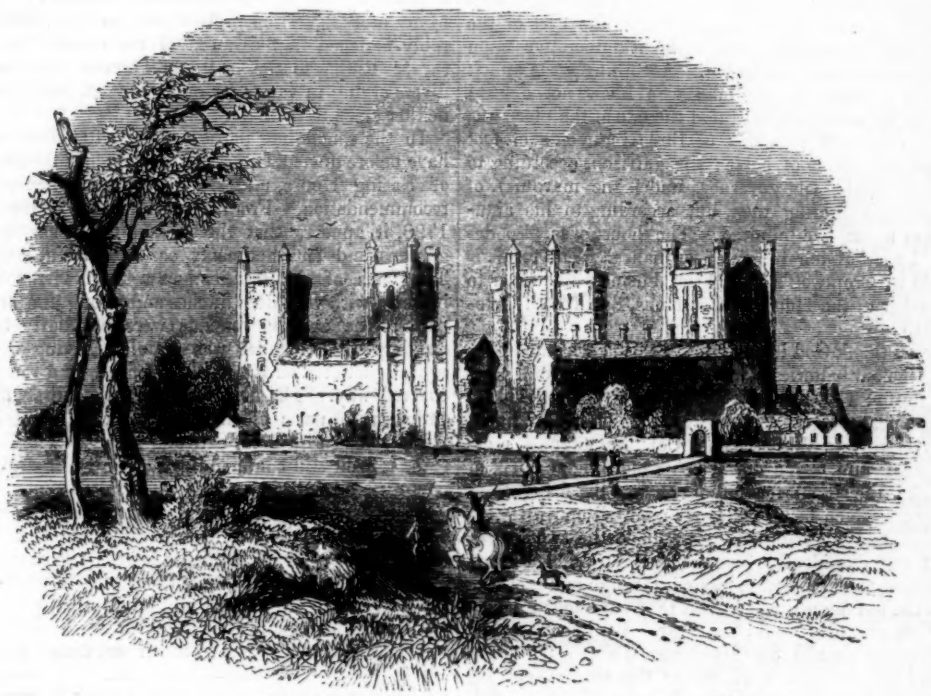
BASING HOUSE.



[Basing House after the siege.]

THE small village of old Basing, near Basingstoke in Hampshire, has been distinguished from an early period of our history, as the scene of a severe battle fought in 871 between the Danes and the Saxons, when the latter, under the command of Alfred and his brother King Ethelred, were defeated; and in later times it has become no less memorable for the gallant defence of Basing House, the principal subject of our present paper.

There appears to have been a castle here at a very remote period, for in a grant made to the priory of Monks' Sherbourne, in the reign of Henry II., mention is made of the "old castle of Basing." This appears to have been rebuilt in a magnificent manner by Paulet, the first Marquis of Winchester, a nobleman in some degree remarkable for his skill in courtiership: he lived during four reigns, those of Henry VIII., Edward VI., Queen Mary, and Queen Elizabeth, and enjoyed the royal favour in all. We may add, that he himself is said to have explained the secret—the "being a willow and not an oak." We have said that he rebuilt Basing House in a magnificent manner: according to Camden, it was rendered *so* magnificent and costly as to be "overpowered by its own weight;" the expenses of living it entailed upon the owner were so great, that the builder's posterity were forced to pull down some part of it. In this splendid mansion the Marquis had the gratification of receiving Elizabeth in 1560, and of entertaining her in so royal a manner that she playfully lamented his great age, remarking, "By my troth, if my lord treasurer were but a young man, I could find in my heart to love him for a husband before any man in England." The queen came here again in 1601, and was entertained by the fourth Marquis for "thirteen dayes," and, as we are told and can very well believe, "to the greate charge of the sayde Lorde Marquesse," for during her visit Elizabeth received in state the French ambassador, the duke of Biron, who was accompanied with about twenty other French noblemen, and a retinue of some four hundred persons. It is recorded that the Queen made this circumstance a matter of gratulation, saying "she had done that in Hampshire that none of her ancestors ever did, neither that any prince in Christendom could do; that was, she had, in her progresses, in her subjects' houses, entertained a royal ambassador, and had *royally entertained him.*" We have now to speak of the gallant defence of Basing House during the civil war, by John, the fifth Marquis.

In August, 1643, Basing House, then very strongly fortified by the Marquis for the king, was invested by the parliamentary troops, and, for a period of two years, broken however by occasional intermissions, was continually harassed by the enemy. During this time many assaults were made, particularly by Sir William Waller, who, within nine days, three times attempted to carry the house, but was repelled with great loss, and ultimately obliged to retreat. On their part, too, the besieged troops kept the besiegers in a constant state of anxiety and alarms by repeated sallies. After Waller's defeat the parliamentary forces of Hampshire and Sussex were collected under Colonel Norton, who once more summoned the Marquis to surrender. The answer was, "If the king had no more ground in England than Basing House, he would maintain it to the uttermost." Famine

now promised to accomplish for the parliament what its soldiers could not; the distress of the garrison became so great, that in September, 1644, the Marquis, after having in vain sent messenger after messenger to Charles, who was at Oxford, for relief, was compelled to send a last notice that in ten days he must surrender if no assistance were given. For the time, however, the brave defenders of Basing House were saved by the courage and address of Colonel Gage, who, seeing their desperate condition, volunteered to convey them provisions. He succeeded in accomplishing this object, and in returning to Oxford with the loss of eleven men killed and forty or fifty wounded. This protracted defence would naturally draw the eyes of the nation upon the struggle, and make it imperative upon the parliamentarians to succeed. Accordingly the attack was next confided to the man who knew not defeat; Cromwell appeared before it, and the fate of the place was sealed. His force consisted of three regiments of foot and three regiments of horse; the garrison, according to Sir Robert Peake (its governor, under the marquis), of three hundred fighting men, but according to his antagonists of about five hundred. The house was also defended by about ten pieces of ordnance. The result is best told in Cromwell's own brief business-like letter to the Speaker of the House of Commons, dated 14th October, 1645:—

"Sir—I thank God I can give you a good account of Basing. After our batteries placed, we settled the several posts for the storm: Col. Dalbeere was to be on the north side of the house next the grange, Col. Pickering on his left hand, and Sir Hardresse Waller's and Col. Montague's regiments next him. We stormed this morning after six of the clock: the signal for falling on was the firing from our cannon, which being done, our men fell on with great resolution and cheerfulness. We took the two houses without any considerable loss to ourselves. Col. Pickering stormed the new house, passed through and got the gate of the old house, whereupon they summoned a parley, which our men would not hear. In the mean time Col. Montague's and Sir Hardresse Waller's regiments assaulted the strongest work, where the enemy kept his court of guard, which, with great resolution, they recovered, beating the enemy from a whole culverin and from that work; which having done, they drew their ladders after them, got over another work and the house wall before they could enter. In this, Sir Hardresse Waller, performing his duty with honour and diligence, was shot in the arm, but not dangerously. We have had little loss: many of the enemies our men put to the sword, and some officers of quality; most of the rest we have prisoners, amongst which are the Marquis and Sir Robert Peake, with divers other officers, whom I have ordered to be sent up to you. We have taken about ten pieces of ordnance, much ammunition, and our soldiers *a good encouragement*," &c. The booty, thus delicately phrased, was indeed considerable, being valued at 200,000*l*. It consisted of money, jewels, provisions, the magnificent furniture, and, in a word, the entire contents of Basing House. The provisions and furniture were sold to the country-people. What the soldiers left a fire destroyed, caused by the neglect of the garrison in quenching a fireball thrown by the besiegers. In less than twenty hours, Basing House literally presented nothing but bare walls and chimneys. The prisoners were about two hundred in number, and the slain about one hundred: of these there were counted in the house immediately after the assault seventy-four men and one woman, a young lady, the daughter of Dr. Griffith, whose fate is very pitiable: "she came," says Mr. Peters, Cromwell's messenger to the parliament, "railing against our soldiers for their rough carriage towards her father," whom he acknowledges they used hardly, on account of his opinions and past conduct. Her two sisters, and six or seven other ladies of rank, appear to have been permitted to escape without any serious injury. The Marquis himself would in all probability have fallen a victim to the rage of the soldiers but for an incident of a nature which it is especially gratifying to meet with in such transactions. The week before, Col. Hammond, the parliamentary officer, had been taken prisoner by the Marquis: when the assault of the house was evidently successful, and all hope leaving the besieged, they began to hide themselves where they could from the fury of their enemies: the Colonel was relieved from his imprisonment just in time to be the means of saving the Marquis's life, according to a promise, but at the immediate hazard of his own. Many of the garrison probably escaped, and others miserably perished in the vaults of the house. Mr. Peters says, "Riding to the house on Tuesday night, we heard divers crying in vaults for quarter; but our men could neither come to them nor they to us."

In the concluding portion of the letter from which we have before quoted, Cromwell recommends the destruction of Basing House, and the parliament concurred in his recommendation. From a survey made of the spot in 1798, it appears that the area of the works, including gardens and entrenchments, occupied about 14½ acres. The form of the fortifications was very irregular, surrounded with very deep ditches and strong and high ramparts; the existing remains were peculiarly bold and striking. The citadel was circular, having an oblong square platform on the north, defended by a rampart and covered-way. The north gateway was still standing, together with parts of the outward wall, constructed of brick, joined with great care and nicety. The site of the ruins is bold and commanding. The Basingstoke Canal now runs through it.

The Marquis lived long enough to taste the bitterness of ingratitude: the Restoration came, but brought him no recompense for his immense losses; the exertions, the anxieties, the gallantry, and the fortitude which entitle the Marquis to our respect and admiration, produced no acknowledgment, at least no fitting or worthy one, from the son of the man for whom so much was done and suffered.

SKETCHES OF THE COASTS FROM SINCAPORE TO PEKIN.

II.—From Camboja to Hainan.

[Continued from No. 523.]

The lake from which the great river Camboja flows is said to be in the centre of Tibet, and to be environed with high mountains, at the foot whereof, upon the brink of the water, are thirty-eight villages, inhabited by gold-miners and searchers for diamonds, with both which precious commodities the bowels of the earth teem in those inland regions. Such are the relations made to travellers; whether founded or not on truth we are unable to say. Even the kingdom of Laos, which lies about a third of the distance from the sea, is one of the most obscure in all Asia, and it seems probable that, although these reports are founded on facts, as the information must pass through many hands ere it reach the shore, much fiction is necessarily blended with it.

Be the accounts, however, true or false, certain it is that the river falls by several mouths into the sea at the distance of one hundred miles from the point of Camboja. On the eastern bank begins the kingdom of Tsiompa, which extends about one hundred and fifty miles along the shore, but its breadth is only ninety. It is inhabited by two races of people, the Loyes and the Moyes; the former a large muscular and well-formed tribe, with reddish complexions, slightly flattened noses, and long black hair. A shirt and trowsers, with a kind of petticoat, occasionally fringed with silk, form their costume.

The productions of their country offer a striking contrast with those of Camboja. Although merely separated by a river, their only remarkable productions are a little cotton, indigo, and inferior silk. Like many other nations

whose country is not exceedingly fertile, they excel in naval affairs, their junks being comparatively well-built. They have extensive fisheries, indeed fish is their principal article of export, together with a little gold and Columba-wood, carried away by the Chinese to burn on their altars, in exchange for which they bring tea, porcelain, and other commodities. The Moyes are a kind of slaves who inhabit the mountains, and have no other covering than a cloth which they wrap around their middle. The government of the king, who holds his petty court at Feneri, is very oppressive, and some crime is always sure to be brought home to whoever is guilty of showing any superior degree of riches.

The whole of the coast is exceedingly picturesque, and is overgrown with jungle and forest. Several islands stud the sea, and numerous little promontories project into the waves. At the eastern extremity Cape Padaran rears its bold front, and all the waters from thence backward to the great river swarm continually with boats of every description, some stationary, engaged in fishing, others passing to and from Europe, Java, Sumatra, Siam, Camboja, Cochin-China, Tonquin, Hainan, and the various ports of China, all issuing from or making towards the narrow passage left between the Paracel shoals and the coast. This passage runs direct north for nearly four hundred miles, when the sea becomes again free and the ships take a straight course to Hainan.

The Paracel shoals are the most famous in all these seas, they being like an overflowed continent, lying just beneath the surface of the water. At the northern extremity there is a group of small reefs, called the Triangles, and the dangerous Macclesfield shoals. If any vessels chance to go aground here, they run a double danger, for, besides the heavy swell, they have another enemy in the marauding Cochin-Chinese, who sail up and down looking out for such windfalls, falling upon and plundering the wreck without mercy.

The kingdom of Cochin-China politically includes a great part of Camboja and the whole of Tonquin, extending as far northward as the Chinese province of Yunnan. It does not enter into our plan to attempt a minute description of the interior, a rapid glance along the coast being all that is necessary to complete the picture of the lands that fall under the traveller's observation in the voyage to China from Sincapore. Not that there is nothing curious in the nature of the country, or the manners of the people; on the contrary, so extraordinary are they, that they would require a long article of themselves to give any adequate idea to the reader. Here the river inundations pour down over all the land from the mountains to the sea. Far back in the inaccessible crags and forests dwell the Kimoyes, a wild and untameable people, something akin to the Moyes, who inhabit the wilderness of Tsiompa; the elephant, the rhinoceros, the wild boar, and the tiger roam over the heights, making frequent incursions into the intervening valleys, destroying the husbandman, bearing away his cattle, and trampling on his harvests. The forests abound with rose-wood, iron-wood, sapan-wood, Columba-wood (for a piece of which, large enough to form a pillow, the Japanese will give four hundred ducats a pound), ebony, calembour, the cinnamon tree, together with all the other varieties which render India so rich, yielding precious gums, balm, and other perfumes; fruits also are plentiful, and though the common vegetables of Europe refuse to yield seed, yet yams, sweet potatoes, green pumpkins, and melons are plenteous in the market-places, which, besides all these provisions, are lined with sheds made of bamboo, and full of cloth and other articles of native manufacture. Narrow paths divide the fields from each other. Buffaloes, for the horses though mettlesome are small, drag the wooden ploughs; children pick the cotton from the pod, the women spin and weave it. In fact, the people themselves are brave, active, and industrious, more warlike than most of their neighbours, expert gunners, but unskilful in casting cannon and other fire-arms. They are said to have a great respect for truth, are extremely ignorant, but affect great politeness towards each other, as well as towards strangers. The civil officers, however, and the soldiers, treat the people like dogs, and for the usual reasons—they are beaten by their superiors, and, like children at play, they ease their own shoulders by passing the blows round through the whole population.

Let us now resume our coasting voyage. Leaving the tower-like rock of Cape Varela, and the broad bay called Quin-nong behind us, we come at length to Touran harbour, which is very capacious and has good holding-ground for ships. The air is cooled and refreshed by alternate land and sea breezes, which blow continually. The hills around are low and covered with bushes, interspersed with little rude altars, erected by the fishermen who frequent this bay, on which to offer rice and sugar or burn odoriferous woods, as a propitiation or thanks giving to their deities for expected or past successes in their daily avocations. At the southern extremity of the harbour, flowing out between low sandy shores, the resort of the pelican of the wilderness, is a river called, as well as the town, by the Portuguese, Faifo, and upon a neighbouring point of land a curious watch-tower or scaffolding, where a native is continually on the look-out for inward-bound ships. The green fields on either hand slope down towards the river, in which may be seen the children of the adjacent hamlets, from the age of two years, swimming and sporting as though in their native element. Touran town itself presents a delightful prospect; the houses are low, built chiefly with bamboo, and thatched with rice-straw or rushes. Here and there trees wave over them, whilst some are situated in gardens and groves of the areca-nut tree, the orange, the lime, or the plantain. The streets or lanes are filled with persons of both sexes, clothed in long-sleeved gowns reaching to the feet. Sometimes in the case of the women the garments are triple, of three different colours and lengths. The back is covered with a light boddice, and a thin veil is thrown over the head. No linen is worn, but instead of it, next to the skin, silk or cotton trowsers. The ladies wear a sash to support their purse or reticule, divided into three compartments, one for tobacco, one for the areca-nut, and the third for the betel-leaf, all three of which they keep constantly in their mouths. Nor are the gentlemen less given to this enjoyment. They one and all throw over their shoulders an ornamented riband, at the end of which, instead of a sword, hangs a similar case to that in use among the ladies, and for the same purpose. Caps and turbans are sometimes worn, but shoes are rejected by the whole population, they having other uses to put their feet to than mere locomotion. In fact, the young men employ this member to play at shuttlecock, and every artisan brings it into play, but especially the boat-builders, whose toes are in constant activity whilst engaged in pegging, sewing, painting, weaving, and luting their fragile canoes. Sugar manufacturers also, iron-smelters, and woodcutters manage to take advantage of the extraordinary flexibility acquired by their feet in consequence of the total absence of covering. Now let us proceed along the shore to Hue, a town intersected with canals in order to keep it cool, and to afford frequent opportunities to the inhabitants of bathing, as well as for the more convenient transfer of merchandise. Every family keeps its covered boat, and it is a pleasant sight to see them glance along ploughing up the water with their carved and gilded heads, and painting the surrounding mirror with their own vivid colours.

We now quit this coast, leaving Tiger Island, South Watcher, and the Cochin-Chinese wall behind us, and stretch away for Hainan. The coast is bluff and rocky, but inland it soon sinks into level plains, whilst in the centre again rises a vast cluster of mountains. In these

dwell the remnant of the aborigines, who formerly traded with the Chinese inhabitants of the low countries in gold, with which the streams are said to abound. On the whole it is a barren country, producing little except timber, rice, and sugar, which latter they carry chiefly to the north of China. Their fisheries, however, are considerable, and thousands of junks come annually from Canton to fetch cargoes of dried and salted fish. Indeed along the whole coast of China the inhabitants are employed in fishing, and the places they frequent present a bright and curious *coup d'œil*, each boat having a lighted lamp on the stem, and moving slowly about amid the straits and islands. Here the fishermen dwell constantly with their families, retiring into the sheltered creeks on the approach of the typhoons, and waiting there the passing of the hurricane. These fisheries have been the nursery of all those pirates who have so frequently desolated the coast of China, from the time of Koshinga to that of the modern Ladrones, who flourished in the beginning of this century.

Beside the commerce we have above mentioned, Hainan trades also with several of the countries that lie between it and Java, in going to which latter the merchants cut timber on the coasts of Tsiompa and Camboja. On arriving at Bankok, they build and man several new junks, which, being laden with suitable cargoes, are brought back and sold at Canton or their native island. Rice also, and bones for manure, are among the imports of Hainan, and the *lapis armenus* (Armenian stone), used in colouring porcelain, is found there and carried in great quantities for that purpose to Canton.

The southern coast of China swarms with innumerable islands, our knowledge of which is daily increasing as our ships touch sometimes at one and sometimes at another for water and fuel. The principal are the Ladrones and Samchuen; the former so called from their having been the resort of the pirates above alluded to, and the latter remarkable as the place where St. Francis Xavier lived when he hoped to enter China, and was buried. This great apostle of the East possessed, in common with innumerable successors, an ardent desire to explore the hidden things of this vast empire; and the desire is natural. We love to study what nature seems to have delighted in rendering difficult of access; and where natural obstacles are increased by the inhospitable character of the natives whose country we would explore, our curiosity is still further excited. Thus with China. The enterprising spirit of European travellers has rendered the attempts at excluding them almost useless. Although frequently driven back, they have again and again returned to the charge; and at length have succeeded in obtaining a permanent footing on their coasts. What turn of events may hereafter occur to extend or diminish this intercourse it is impossible to foresee, but that some change in our relations with that empire is approaching must be evident to all.

ON MAGNESIA.

THERE are probably few persons who have not, at some period or other, had opportunities of experiencing the mild and beneficial qualities of magnesia, and who may not be interested in a brief description of its history, mode of preparation, and properties.

About the beginning of the eighteenth century, a Roman canon exposed for sale at Rome a white powder which he called *Magnesia alba*, or white magnesia, and stated that it would cure all diseases. He kept the method of preparing it profoundly secret; but in 1707 Valentini stated a method by which a similar powder could be prepared, and in 1709 Slevogt discovered another method. The properties of this powder were, however, so little known, that most chemists continued to regard it as nothing more than a preparation of lime; until the year 1755, when Dr. Black published some admirable experiments which explained its real nature.

Magnesia exists abundantly in nature: it is found in sea-water and in various mineral springs in union with sulphuric and muriatic acids. Its chief locality is in that class of rocks called magnesian limestone, where, as the name implies, it is in union with lime. Magnesia is also found in some minerals, and its presence may generally be detected by the touch,—a soapy feel pertaining to most of them: indeed, one of these minerals has, on that account, obtained the name of soap-stone.

An impure form of carbonate of magnesia is sometimes found native in Piedmont, Moravia, and the East Indies, in which latter place a whole range of low hills is said to consist of it. In the state of hydrate (that is, magnesia chemically combined with water) it occurs at Swinaness in Uist, one of the Shetland Isles; and also at Hoboken in New Jersey, where it is said to be very pure.

The reader is probably aware that a metal in union with oxygen is called a metallic oxide. Now it may excite some surprise when we state that calcined magnesia (as it is termed), a white, inodorous, and almost tasteless substance, is a metallic oxide; and that it is so is thus proved:—if oxygen be expelled from it, we then get a solid metallic substance very much like silver, called magnesium, which is considerably heavier than water, and which, if exposed to the atmosphere, absorbs oxygen, and is reconverted into magnesia.

There are two kinds of magnesia used in medicine: 1, common magnesia, which is a carbonate; and 2, calcined magnesia, which is the metallic oxide we have just mentioned. The process for obtaining the first kind of magnesia will be readily understood by the following easy experiment, which requires but little apparatus for its performance:—

Into a wine-glass put a small quantity of carbonate of soda, and into another wine-glass a rather less quantity of sulphate of magnesia (Epsom salts). Pour equal quantities of boiling water into the two glasses; and when the contents are dissolved, the solution will be quite clear and limpid. Pour the contents of one glass into the other, and the mixture will become turbid and opaque. The reason for this remarkable change is this: carbonic acid quits the soda and unites with the magnesia, forming carbonate of magnesia; at the same time sulphuric acid quits the magnesia and unites with the soda, forming sulphate of soda, which, being a very soluble salt, remains in solution; but the carbonate of magnesia, being insoluble, sinks to the bottom as the liquid cools. If the contents of the glass be allowed to cool, the solution of sulphate of soda can be poured off: pure cold water is then added, to wash the carbonate of magnesia: it is thrown upon a filter of blotting-paper, and more cold water is added, which passes through and leaves the carbonate of magnesia behind. If this latter be dried, it will be found to possess all the properties of common magnesia.

A plan somewhat similar to this is adopted in the preparation of common magnesia on the large scale, so that we need not repeat the description of the process. When the magnesia is washed and dried, it is made up into small parcels for the retail trade of the druggist.

We have said that carbonate of magnesia is insoluble. This is not strictly correct: it is however so little soluble as to require 2493 times its weight of cold and 9000 times its weight of boiling water for solution. This again is a very remarkable fact: we know that in almost all cases boiling water dissolves a far larger quantity of a soluble solid than cold water does:—the reverse is the case with magnesia and another substance, viz. lime.

Calcined magnesia is obtained in its purest form by exposing the carbonate of magnesia obtained in the first process to a strong red heat for a few hours: carbonic acid and moisture are expelled, and the magnesia is made

slightly caustic. Calcined magnesia requires 5760 times its weight of cold, and 36,000 times its weight of boiling water for solution. By exposure to the air it absorbs moisture and carbonic acid, and thus returns to the state of a carbonate.

Magnesia possesses most of the properties of alkalis: it forms neutral salts with acids, which salts are usually remarkable for their very bitter taste. Magnesia will bear a very intense heat without fusing.

The chief medical use of magnesia is, in doses of from one scruple to one drachm, to neutralize the acid of the stomach, and to act as a gentle aperient. Professor Brande says that "small doses of carbonated magnesia are also effectual in some cutaneous eruptions, especially in the pimples about the chin, nose, and forehead, which are symptomatic of acidity of the stomach." When magnesia is taken in large quantities, it has a tendency to lodge in the bowels and concrete, thus producing much inconvenience and often danger to the patient. In cases of acidity of the stomach and heartburn, calcined magnesia should be taken, because the acid of the stomach combines with the magnesia without effervescence; whereas if the carbonate be used, this effervescence is often very painful and inconvenient. The carbonate is chiefly used as an aperient.

AMMON, RABBAH, OR PHILADELPHIA.

[Ruins of the Mausoleum at Philadelphia.]

The ancient metropolitan city of the Ammonites, so often mentioned in the sacred writings under the name of Ammon or Rabbah, and whose present state so strikingly exhibits the fulfilment of the sacred prophecies, appears to have been rebuilt in the third century by Ptolemy Philadelphus, from whom it derived the name of Philadelphia. The oldest of the existing remains cannot be ascribed to a period earlier than this, whilst the others are evidently of a later date, and may be referred to the time of the Roman domination in Syria. After the destruction of the city, when or under what circumstances appears to be now unknown, its very situation during the lapse of centuries was forgotten. Its site was at length indicated by Seetzen, and various travellers have visited it since, and described the existing remains. Among these we may particularly mention Lord Lindsay and Mr. Buckingham. The former thus describes his approach:—

"The scenery waxed drearier and drearier as, at ten hours and a half from Jerash, we descended a precipitous stony slope into the Valley of Ammon, and crossed a beautiful stream,* bordered at intervals by strips of stunted grass, often interrupted; no oleanders cheered the eye with their rich blossoms; the hills on both sides were rocky and bare, and pierced with excavations and natural caves. Here, at a turning in the narrow valley, commence the antiquities of Ammon. It was situated on both sides the stream: the dreariness of its present aspect is quite indescribable—it looks like the abode of death: the valley stinks with dead camels; one of them was rotting in the stream, and although we saw none among the ruins, they were absolutely *covered* in every direction with their dung. That morning's ride would have convinced a sceptic; how runs the prophecy?—'I will make Rabbah a stable for camels, and the Ammonites for flocks; and ye shall know that I am the Lord!'

"Nothing but the croaking of frogs and screams of wild birds broke the silence, as we advanced up this valley of desolation. Passing on the left an unopened tomb (for the singularity in these regions is where the tomb has *not* been violated), several broken sarcophagi, and an aqueduct, in one spot full of human skulls, a bridge on the right, a ruin on the left, apparently the southern gate of the town, a high wall and lofty terrace, with one pillar still standing, the remains probably of a portico, we halted under the square building supposed by Seetzen to have been a mausoleum, and after a hasty glance at it, hurried up the glen in search of the principal ruins, which we found much more extensive and interesting than we expected, not certainly in such good preservation as those of Jerash, but designed on a much grander scale. Storks were perched in every direction on the tops of the different buildings; others soared at an immense height above us."

The valley in which these ruins stand is not above two hundred yards across, and is bounded on the north

* Called Moiet Ammon. It has its source in a pond a few hundred paces from the south-west end of the town, and after passing under ground several times, empties itself into the Zerka (Jabbok).

by a hill on which stands the remains of a fort, and on the south by a hill which is surmounted by a theatre. Through the valley runs a clear stream of excellent water, on each side of which are the remains of stately and beautiful edifices. The first building we shall notice as we move in a westward direction is of a square shape, with a Corinthian colonnade toward the stream, and presenting in the interior the appearance of an open amphitheatre. In the centre of what may have been the arena is a circular space full of ruined blocks, with a low arched opening at the southern extremity, intended perhaps for the passage of the beasts. Around this space rise upwards rows of stone seats intersected by smaller flights for the purpose of ascending or descending, of which, on the south side, two distinct divisions yet remain entire. Mr. Buckingham supposes that the amphitheatre was entered from above by flights of steps running up the exterior. The style of architecture is Corinthian, and the execution excellent. Very near to this building is a large theatre in extraordinary preservation, built in the natural hollow presented by the side of the hill. The front was originally open, for instead of a wall there extended a fine Corinthian colonnade, part of which yet remains. The pillars are about five feet in diameter, and the whole length of the colonnade was about one hundred and eighteen paces. The pavement of the stage is still perfect. The theatre is divided into three distinct portions, as if for distinct classes of persons; the whole comprising forty-five ranges of seats. A broad pathway runs round the whole at the top, in which there is at one part a recess with a fine Corinthian doorway, and concave niches on each side, intended probably for statues. The perpendicular height of the building is calculated by Mr. Buckingham at about one hundred and twenty feet, and the distance from the stage to the upper row of seats nearly two hundred feet. On the whole this edifice may be considered an unusually perfect monument of Roman luxury, for at a comparatively small expense it might be made available for its original purpose. Still following the course of the stream in a westward direction, we find on its opposite side the remains of a colonnade and the front of some large building, with steps descending to the water. Just above this edifice, on the side of the hill whereon the fort is built, are a number of arches, some of Roman and others apparently of Saracenic architecture. To the westward of these arches is a portion of a very large edifice, which looks like a temple, with some columns yet standing, and a part of the northern wall, with a doorway and various ornaments. At a part of the stream still farther westward, where the hill on which the theatre is built reaches close to it, there is a broad arch thrown over the water, the under part of which is smooth, but the upper rough and broken, as though some building had stood upon it. Crossing this bridge, we find a large edifice presenting its semicircular front to the stream, built of rustic masonry with solid stones of an oblong form closely united without cement. The southern front presents appearances of waterworks. In the interior of the building there was a colonnade standing round the inner part of the semicircular front we have mentioned. To the south-west of this building is a larger and more perfect one, with Roman arches and a square tower. The few buildings here noticed form but a small portion of the many interesting remains of this very interesting spot. We cannot better conclude our notice than in Lord Lindsay's words:—"Such are the relics of the ancient Ammon, or rather of Philadelphia, for no building there can boast of a prior date to that of the change of name. It was a bright cheerful morning, but still the valley is a very dreary spot, even when the sun shines brightest. Vultures were garbaging on a camel, as we slowly rode back through the glen, and reascended the *akiba* by which we entered it. Ammon is now quite deserted except by the Bedouins, who water their flocks at its little river. We met sheep and goats by thousands and camels by hundreds coming down to drink, all in beautiful condition. How—let me again cite the prophecy—how runs it? 'Ammon shall be a desolation!—Rabbah of the Ammonites . . . shall be a desolate heap!—I will make Rabbah a stable for camels, and the Ammonites a couching place for flocks; and ye shall know that I am the Lord!'"

HISTORY OF A MAHOGANY TABLE.—I.

IN the first volume of the 'Penny Magazine,' p. 107, we gave a brief account of the mahogany-tree, of its mode of growth in South America, the twelvemonth's labours of a party of mahogany-cutters, and the final shipment of a load of mahogany in the form of square logs. We now profess to trace the progress of a log of mahogany till it assumes the familiar form of a table.

The quantity of mahogany imported into Great Britain amounts to ten or twelve thousand tons annually; and it pays an import duty varying from 1*l.* 10*s.* to 7*l.* 10*s.* per ton, according as it is brought from an English or a foreign colony. The price at which it is valued varies so extremely, according to the beauty of the wood, that it is difficult to determine the real value of a log. Dealers generally introduce an auger into a log of mahogany before purchasing it, in order to ascertain the quality of its grain, and to regulate the price thereby; but even then the quality and real value of the wood are matters of much uncertainty, so that the purchase is a kind of lottery. As the finest and most beautifully variegated mahogany is seldom used in logs or planks, but is cut up into very thin veneers, the quantity of surface of articles of furniture, &c. which can be covered by one log of mahogany is very large; so that when a log is sufficiently beautiful to be cut up into veneers, purchasers are willing to pay a very large price for it. It has been stated that a few years ago Messrs. Broadwood, the celebrated pianoforte manufacturers, gave the enormous sum of three thousand pounds for three logs of mahogany: these logs were the produce of one tree, and measured each about 15 feet long, 38 inches in diameter, and the same in thickness. They were afterwards cut into veneers of eight to the inch; and when laid on a groundwork, in the usual mode of veneering, were found to be susceptible of a most beautiful polish, offering a different figure when viewed in different directions, owing to the wavy or curled form of the fibres. It is not difficult to calculate that the veneers cut from these three logs would cover a surface of ground nearly three acres in extent. The reader will thence easily conceive that the value of a log of mahogany destined to be cut into veneers very far exceeds that of one which, from the inferior beauty of its fibres, is used in the solid state for legs of chairs and tables, &c.

A log of mahogany, as of any other wood, should be well seasoned before it is used: this seasoning does not imply that it should be exposed to heat to expel the moisture which still remains in it, but that it should be so placed as to be exposed to the action of the air for a considerable time. In the yards of the mahogany and timber dealers, the wood is generally exposed to the action of the air for a long period, both before and after the logs are cut up into planks or other thin portions.

Supposing a log to be ready for cutting, it must be sawn into thinner portions, whatever be the purpose to which it is to be applied. For all such purposes as the legs of tables and chairs, the posts of bedsteads, the bed of a table which is not to be veneered, &c., the log is cut up into planks varying from a quarter of an inch to several inches in thickness; but where it is to be in the form of veneers, it is reduced to a thickness varying from one-eighth to one-fifteenth of an inch. We will first speak of the cutting of the log into planks, for the legs, &c.

No other mode of dividing a log of wood into parallel

layers or planks has ever been devised equal to the use of a toothed cutting instrument, that is, a steel instrument which, like the saw, is jagged at the edge with triangular notches. Without attempting to decide who was the inventor of the saw, there is evidence existing that such an instrument was well known in early times. The ancient Egyptians used a short toothed saw, and among the antiquities found at Herculaneum is a picture, in which are two figures sawing through a piece of wood. There is a kind of work-bench consisting of a long table resting on two four-footed stools: the piece of wood to be sawn extends beyond the end of the bench, and is secured down upon it by cramps which pass through holes in the bench. The saw employed by the figures very much resembles a modern frame-saw: it consists of a square frame, having in the middle a blade, the teeth of which stand perpendicularly to the plane of the frame. It would thus reasonably appear that the frame-saw has been known for eighteen or twenty centuries.

But although saws have been used from a very early period, yet split or riven planks are used in many countries where the arts are in their infancy even in the present day. A wedge is driven into a cleft so as to tear or rive off planks or deals from a large log; and the inequalities necessarily resulting from this mode are then hewn away by some sharp instrument, such as an adze, so as to reduce the two surfaces to a tolerable degree of smoothness. So much waste of wood is occasioned by this mode of cutting the logs, that it is said Peter the Great of Russia, where it was generally adopted in his day, endeavoured to put a stop to it by prohibiting hewn deals to be transported to the river Neva. Since that period Russia has followed the example of other countries in using the saw for these operations. We may however here remark, that for some purposes hewn planks and laths are more useful than those produced by the saw, as being stronger: that they are stronger is occasioned by this circumstance,—when the timber is split by the wedge, the fissure follows the direction of the fibre of the wood, and leaves it whole; whereas the saw, which proceeds in the line marked out for it, divides or cuts the fibres, and by that means lessens the cohesion and strength of the wood.

The saw in its simple form is too well known to need description; but it is only that form of it used in cutting up large logs into planks with which we have here to do. The common mode by which this cutting is effected is as follows:—A pit, several feet deep, and of considerable length, has a hollow kind of framework built over it, and on this framework the log to be cut is laid. Chalk lines are then drawn along the log from one end to the other, and at intervals corresponding to the intended thickness of the planks. A saw with coarse teeth is employed to cut the log: it is six or seven feet long, and has a handle at each end. One man descends into the pit, and takes the lower handle, while another mounts on the log, and works the upper handle. The two men then, by a vertical action of the saw, cut the log from end to end, the "top sawyer" guiding the saw according to the chalk line, and receding as the saw advances. As only one cut can be made at a time, when that one is finished, the saw is removed to another chalk line, and a second cut made in a similar manner: these operations are repeated until the whole log is cut up into planks or pieces of various thicknesses. In some sawing-sheds the "bottom sawyer" stands at the level of the ground, and the other one, together with the log to be cut, is elevated on a stage or frame some feet from the ground.

Such was the mode of sawing adopted in most countries for many ages, and still is adopted in many parts of England, although a very severe exertion for human strength, and in some respects a singularly wasteful one, since the downward motion of the saw is alone effective in dividing the wood, the upward motion being no further useful than in preparing the saw to make a second cut. It is only in modern times that this inconvenience has been completely obviated by the general use of saw-mills. These mills appear to have been used to a considerable extent in Germany long before their introduction into England in the seventeenth century; but so violent was the opposition which the English sawyers raised against their use, that for many years all attempts to establish them permanently were unavailing. Even so late as the year 1767, an opulent timber-merchant caused a saw-mill driven by wind to be erected at Limehouse, under the direction of one James Hansfield, who had learned in Holland and Norway the art of managing machines of that kind: a mob of sawyers, however, assembled, and pulled the mill to pieces. But the advantages of these mills became soon so apparent, that they bore down all opposition, and their employment became very general. They were moved either by wind or water; but when steam-power was placed within the reach of manufacturers, saw-mills underwent a still more important improvement.

Without going into the minutiæ of construction, we may briefly describe the action of a saw-mill, such as is frequently used at the present day. A number of saws are fitted vertically into a frame, truly parallel one to another, and at distances of one, two, three, &c. inches, according as the log of mahogany or other timber is to be cut into planks one, two, or three, &c. inches in thickness. These saws are made immoveable in the frame, but the frame itself works up and down like the sash of a window. The log is laid horizontal, and one end of it brought up to the toothed edges of the row of saws. The frame containing the saws is then worked up and down, the saws all cutting simultaneously into the log; and as the latter is placed upon a bed or carriage sliding on the floor of the mill, and sufficiently narrow to pass through the opening in which the saw-frame slides up and down, it is pushed onward as fast as the saws cut, until the whole length of the log has been thus operated on. As the saws are ranged in a perfectly parallel manner, and as the log is moved onward with the greatest regularity, the cuts are made more truly than they could possibly be effected by hand, at the same time that several are being made at once instead of one. So much have the advantages of this mode been felt of late years, that almost every considerable timber-yard now contains a saw-mill.

The mill which we have just described is on the reciprocating principle, that is, the saws work alternately upward and downward; it therefore still retains the disadvantage, in common with hand-saws, of producing no effective working during the upward movement. This loss of power gave rise to the invention of circular saws, first introduced, we believe, by Mr. Brunel, about thirty-five years ago, and which are now extensively employed in sawing generally, and almost wholly for the cutting of veneers. The saws are mounted on a central axis, and the log is driven up against the toothed edge much in the same way as in the reciprocating saw-mill. A recent writer, speaking of the saw-mill of Messrs. Watson, at Battersea, erected by Mr. Brunel, says:—"Their apparatus is driven by steam, and consists of a number of circular saws, the largest of which is eighteen feet in diameter. One side of those saws is a plane kept perfectly true by a strong and well-bound framework, to the circumference of which the saw is attached. The teeth of the saw are rather large than otherwise, in order that it may not clog with the saw-dust, and thus tear the finer veneers; and it revolves with considerable velocity. The log of timber which is to be cut into veneers is fastened upon a frame, with the piece in the direction in which it is to be cut in a vertical position. The frame that carries forward the log is moved at a rate which may be varied according to the quality of the timber that is cut: it has a rack on the under part, in which a pinion works. In

cutting coarse stuffs, such as the soft and straight grained mahogany, of which the bottoms of drawers and other internal works of an inferior kind are made, the log moves forward, and the veneer is cut at the rate of about one foot of length in four seconds. Allowing the depth of the log to be two feet, the quantity of veneer taken off by one of these machines alone would be two hundred and forty square feet in an hour."* In this establishment the eighteenth-feet saw makes thirty-two revolutions per minute; while the smaller saws revolve much more rapidly: the larger saws and the slower motion are reserved for the finer and harder kind of wood.

Mr. Barlow describes a remarkable mode of cutting veneers, as adopted in Russia. The operation is begun by placing the log on a square axle, and turning it to a circular or cylindrical form while in rapid rotation. The blade of a plane of highly tempered steel, rather longer than the cylindrical log of wood, is fixed at the extremity of a frame six or seven feet long, in such a manner as to exert a constant pressure upon the cylinder, and pare off a sheet of equable thickness, which folds upon another cylinder like a roll of linen. The frame is so regulated as to depress the plane in proportion as the cylinder becomes pared away towards the centre. This machine is said to cut the most valuable woods without any waste, and with great rapidity; while the thinness to which the veneer is cut is so extraordinary, that it has been used for the covering of books, and other purposes where leather or paper are usually employed. The veneer thus produced is, in fact, nothing more nor less than a shaving, but one of which the thickness is uniform and equal. It is said that one hundred feet in length of veneer may be cut by this machine in three minutes.

These are the modes by which thin veneers are produced at the present day; and it may easily be judged how great are the advantages which they present over the original method (when veneers were cut by hand) in regularity of surface, in saving of material, in avoidance of fracture, and in saving of time. Formerly, in the absence of these advantages, a mahogany table, such as is now seen in almost every decent house, could not be procured but at such a price as placed it out of the reach of any but the wealthy.

Dogs of the Tschuktschi.—Of all the animals that live in the high north latitudes, none are so deserving of being noticed as the dog. The companion of man in all climates, from the islands of the South Sea, where he feeds on bananas, to the Polar Sea, where his food is fish, he here plays a part to which he is unaccustomed in more favoured regions. Necessity has taught the inhabitants of the northern countries to employ these comparatively weak animals in draught. On all the coasts of the Polar Sea, from the Obi to Behring's Straits, in Greenland, Kamtschatka, and in the Kurile Islands, the dogs are made to draw sledges loaded with persons and with goods, and for considerable journeys. The dogs have much resemblance to the wolf. They have long, pointed, projecting noses, sharp and upright ears, and a long bushy tail; some have smooth, and some have curly hair; their colour is various —black, brown, reddish-brown, white, and spotted. They vary also in size; but it is considered that a good sledge-dog should not be less than two feet seven and a half inches in height, and three feet three-quarters of an inch in length (English measure). Their barking is like the howling of a wolf. They pass their whole life in the open air: in summer they dig holes in the ground for coolness, or lie in the water to avoid the musquitoes; in winter they protect themselves by burrowing in the snow, and lie curled up, with their noses covered by their bushy tails. The female puppies are drowned, except enough to preserve the breed, the males alone being used in draught. Those born in winter enter on their training the following autumn, but are not used in long journeys until the third year. The feeding and training is a particular art, and much skill is required in driving and guiding them. The best-trained dogs are used as leaders, and as the quick and steady going of the team, usually of twelve dogs, and the safety of the traveller, depend on the sagacity and docility of the leader, no pains are spared in their education, so that they may always obey their master's voice, and not be tempted from their course when they come on the scent of game. This last is a point of great difficulty; sometimes the whole team, in such cases, will start off, and no endeavours on the part of the driver can stop them. On such occasions we have sometimes had to admire the cleverness with which the well-trained leader endeavours to turn the other dogs from their pursuit; if other devices fail, he will suddenly wheel round, and by barking, as if he had come on a new scent, try to induce the other dogs to follow him. In travelling across the wide tundra, in dark nights, or when the vast plain is veiled in impenetrable mist, or in storms or snow-tempests, when the traveller is in danger of missing the sheltering powarna, and of perishing in the snow, he will frequently owe his safety to a good leader; if the animal has ever been in this plain, and has stopped with his master at the powarna, he will be sure to bring the sledge to the place where the hut lies deeply buried in the snow; when arrived at it he will suddenly stop, and indicate significantly the spot where his master must dig. Nor are the dogs without their use in summer; they tow the boats up the rivers; and it is curious to observe how instantly they obey their master's voice, either in halting or in changing the bank of the river. On hearing his call they plunge into the water, draw the towing-line after them, and swim after the boat to the opposite shore; and, on reaching it, replace themselves in order, and wait the command to go on. Sometimes even those who have no horses will use the dogs in fowling excursions, to draw their light boats from one lake or river to another. In short, the dog is fully as useful and indispensable a domestic animal to the settled inhabitant of this country, as the tame rein-deer is to the nomade tribes. They regard it as such. We saw a remarkable instance of this during the terrible sickness which, in the year 1821, carried off the greater part of these useful animals. An unfortunate Juhakir family had only two dogs left out of twenty, and these were just born, and indeed still blind. The mother being dead, the wife of the Juhakir determined on nursing the two puppies with her own child rather than lose the last remains of their former wealth. She did so, and was rewarded for it, for her two nurslings lived, and became the parents of a new and vigorous race of dogs. In the year 1822, when most of the inhabitants had lost their dogs by the sickness, they were in a most melancholy condition; they had to draw home their own fuel; and both time and strength failed them in bringing home the fish which had been caught in distant places; moreover, whilst thus occupied, the season passed for fowling and fur-hunting; and a general and severe famine, in which numbers perished, was the consequence. Horses cannot be made a substitute; the severity of the climate and the shortness of the summer make it impossible to provide sufficient fodder; the light dog can also move quickly over the deep snow, in which the heavy horse would sink. Having thus described the out-of-door life and employments of the people of this district, let us accompany an individual into his habitation, at the close of summer, when he and his family rest from all these laborious efforts, and enjoy life after their manner. The walls are caulked afresh with moss, and new plastered with clay, and a solid mound of earth is heaped up on the outside as high as the windows. This is accomplished before December, when the long winter nights assemble the members of the family around the hearth. The light of the fire, and that of one or more train-oil lamps, are seen through the ice-windows; and from the low chimneys rise high columns of red smoke, with magnificent jets of sparks occasioned by the resinous nature of the wood. The dogs are outside, either on or burrowed in the snow. From time to time their howling interrupts the general silence; it is so loud as to be heard at great distances, and is repeated at intervals, usually of six or eight hours, except when the moon shines, when it is much more frequent.—*Expedition to the Polar Sea, by Admiral F. von Wrangell.*

* Library of Entertaining Knowledge, 'Timber Trees,' p. 171.

*** The Office of the Society for the Diffusion of Useful Knowledge is at 59, Lincoln's Inn Fields.

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